



UK Agroforestry Innovation Network Sally Westaway, Organic Research Centre



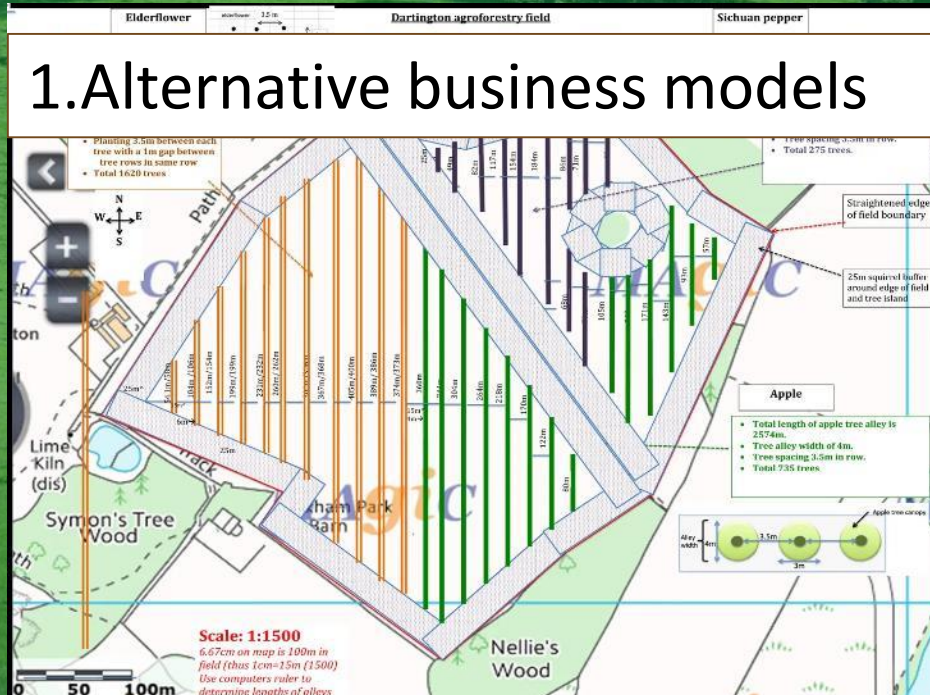
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727872



AGROFORESTRY INNOVATION NETWORKS

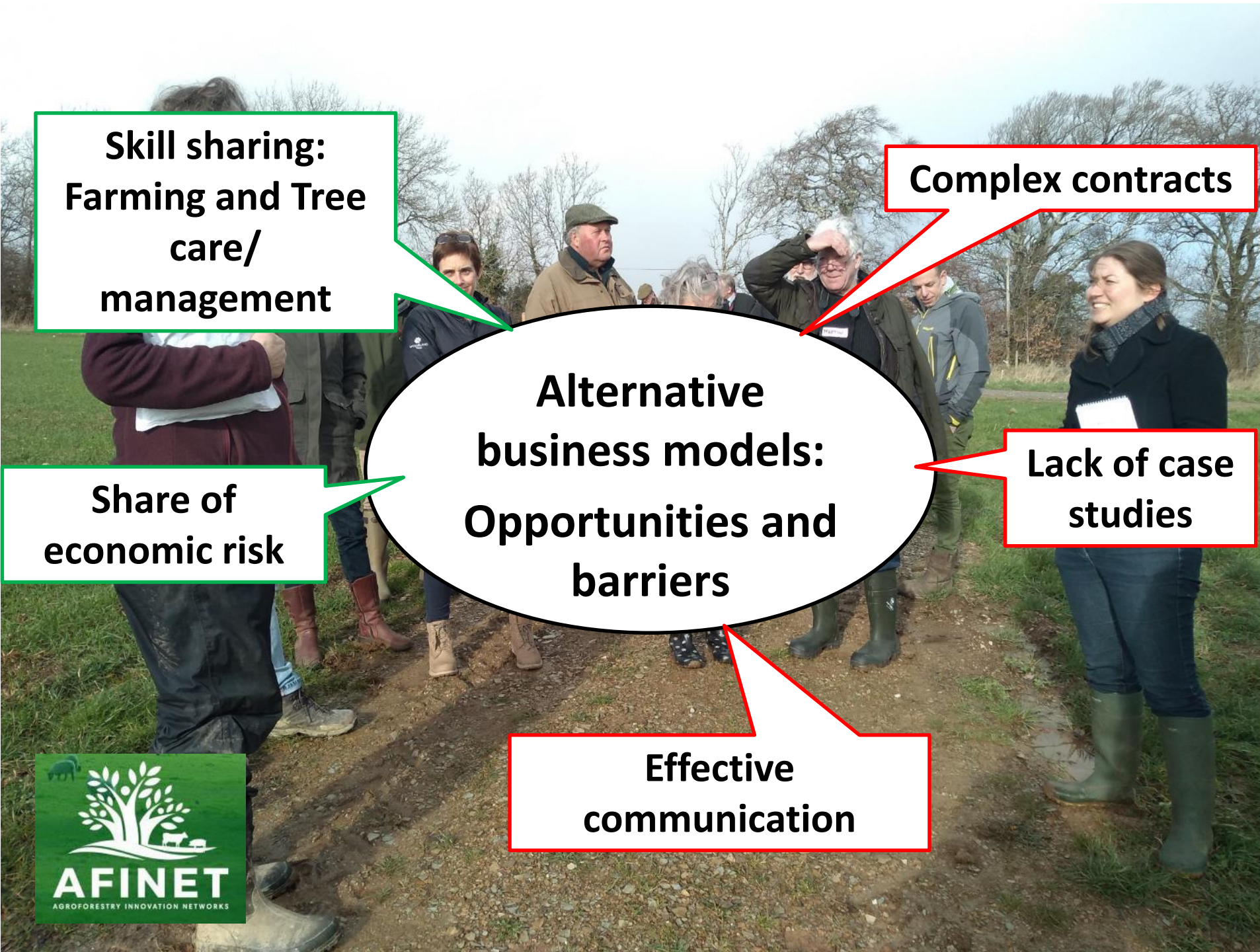
Selected Innovations

1. Alternative business models



2. Tree fodder





UK Agroforestry Innovation Network

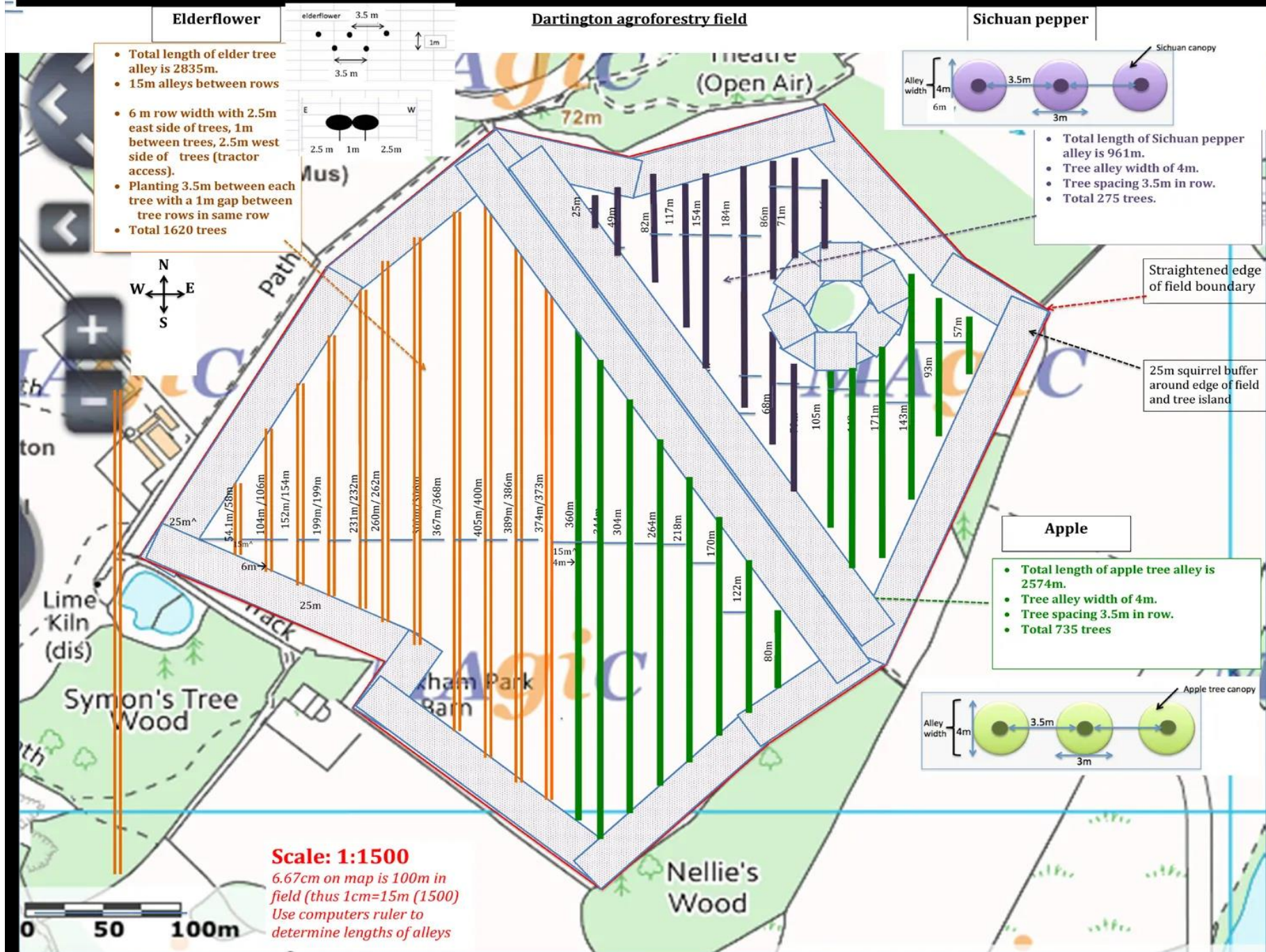
Agroforestry Implementation Workshop



Dartington Estate

7 February 2019

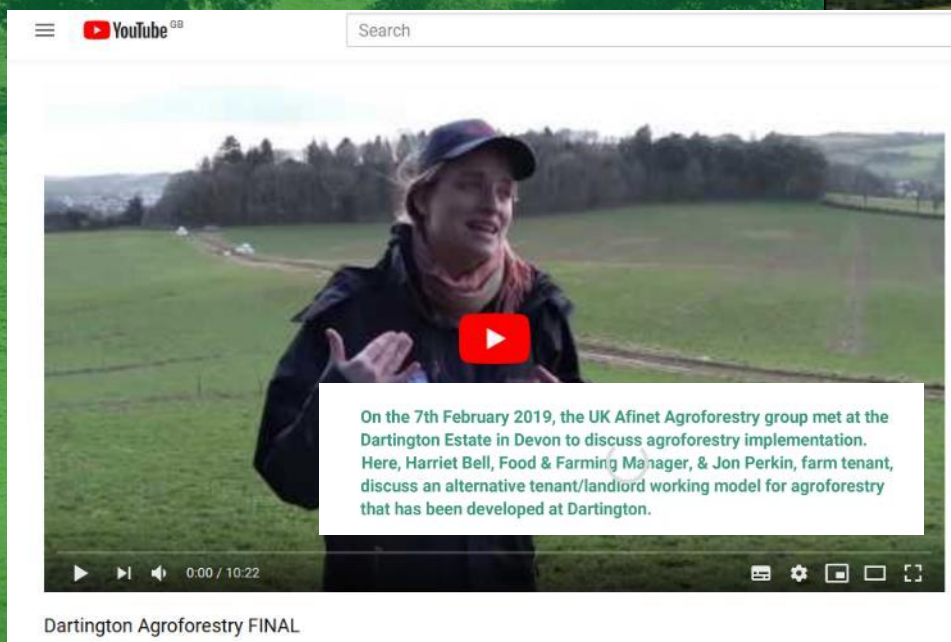
The Organic Research Centre



The Organic Research Centre



AGROFORESTRY INNOVATION NETWORKS



five business models agroforestry systems

agroforestry systems on UK farms led by the farmer who is also tenant. However, many farmers lack the specialist knowledge, trees and the capital to fully when setting up a new in addition, trees are a long-term investment between farmers with known disincentives agroforestry systems on

A multi-tiered arrangement

Jon and Lynne Perkins at Old Parsonage Farm are livestock farmers. In this model they manage the rows between trees as part of their 7-year stage/ arable rotation and are financially compensated for the area lost to the tree rows by the licensor. The investment in the trees is made by three separate businesses (Lancashire Drivels (3,600 elderflower trees), The Apricot Centre (600 apple trees) and Salthouse & Peppermore (150 Sichuan pepper trees)). These businesses specialise in tree crops and have a market incentive to make the tree crops work to meet the demands for their products.

A licence was granted to the businesses for the tree strips instead of a farm business tenancy, with the farmers remaining in management control of the land upon which the trees are planted and able to claim basic farm payment on the area. However, the tree licences needed the security of being able to use the piece of land on which they're planted for a sufficient period to see a return on one's investment. The solution was that the land owner, Dartington Hall Trust, provided a separate undertaking to ensure the continuation of the licence on the same terms regardless of the tenant.

the way

try made sense rebuilding soils, the estate and estate to reducing. However, some were expensive, initial investment it as a waste of a

The key benefit of multiple partners is combining different people's skills and expertise results in a system that is more socially and economically resilient - everyone brings their own markets for their own crop and by working together can access different markets, everyone has the potential to grow their market needs.



needed with this on least was the pleasure together for the design of everyone else's on the start.

veloping the tree for all parties tive. The fairness was particularly main farm tenant, Basic Payment

usual depreciation method for calculating compensation rates was only partly applicable. Dartington developed their own compensation formula which required the Trust, as landowner, to back up the tenant's agreement, which may be unattractive to other landowners. It's still too early to know if all elements of the tree licence are right. There's no comparable project and a review with data relating to yields and costs will be conducted a bit further into the project to see how it's all stacking up. This could provide a useful model for similar future agreements.

Harriet Bell, Community Resilience Food & Farming Manager, Dartington Hall Trust, January 2019



Scheme, potential increase in contractor costs for working a more challenging field - and balancing that against what's affordable for the licensor, their upfront investment and long term payback. The compensation element of the licence was also a sensitive subject; trees increase in value over time whereas normally investment items (farm buildings etc.) decrease in value as the

Further information
<https://www.dartington.org/trust-to-be-new-mild-agency-agroforestry-model-45-acres/>

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**Livestock
nutrition and
health**

**Regulatory
restrictions**

**Tree fodder:
Opportunities
and barriers**

**Knowledge
gaps**

**Buffer against
forage
shortages**

**Mechanisation and
management**

Tree Fodder: How to feed?
Harvest and give fresh or dry or
allow the animals direct access



Farmer Workshops



Tim Downes

1. Nutritional browsing trial (*Acer pseudoplatanus*, *Carpinus betula*, *Tilia*, *Ulmus glabra* – 3 rows, 8m apart)

2. Medicinal trial

(*Salix fragilis* and *Salix alba* – 2 rows 25m apart)

Peter Aspin

Trees for browsing

(ash, elm, honey locust, black locust, plus nut trees – walnut, hickory, sweet chestnut, almond, hazel)



AGROFORESTRY INNOVATION NETWORKS

More resources on the **AFINET Knowledge Cloud**

Authors	Title
Lindsay Whistance	BROWSE, PRESERVED TREE FODDER AND NUTRITION. How offering access to browse and feeding tree fodder can supplement the diet of domestic animals
Smith J Westaway S and Whistance L	TREE FODDER IN UK LIVESTOCK SYSTEMS: OPPORTUNITIES AND BARRIERS
Smith J Westaway S and Whistance L	TREE FODDER IN UK LIVESTOCK SYSTEMS: OPPORTUNITIES AND BARRIERS
Helen Read	Fodder Pollards
Mary Crossland	Tree fodder: food for thought?
Lindsay Whistance	Browse, preserved tree fodder and nutrition - Pastoreio da forragem arbórea, sua conservação e nutrição
Sokratis Stergiadis Irene Mueller-Harvey	Benefits of plant tannins on ruminant nutrition, health and environment
I. Smith Jo	SOLID Technical Note 12. Agroforestry for livestock systems



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TREES FOR SHADE, SHELTER, SURVIVAL AND BODY MAINTENANCE

How offering access to trees can improve the welfare of domestic animals

AFINET

THE WHAT AND WHY

Why offer animals access to trees?

The benefits of shade/pasture to domestic animals include access to shelter in the winter and shade in the summer, as well as providing scratching posts to maintain coat condition. The behaviour of domestic animals can be grouped into the categories of locomotion, metabolism, nutrition, reproduction, and social interaction.

When an animal is hungry it will seek out food. Similarly, when hot or cold, it seeks shade or shelter and trees, shrubs and shelterbelts can offer effective protection. Coat condition is important in maintaining animal health and tree trunks and branches are readily used as scratching posts. The newborn offspring of farm animals are either born (e.g., cattle or lambs) or born (e.g., sheep) but mothers or all species, seek out suitable shelter when giving birth.

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BROWSE, PRESERVED TREE FODDER AND NUTRITION

How offering access to browse and feeding tree fodder can supplement the diet of domestic animals

AFINET

THE WHAT AND WHY

Why offer animals access to browse or tree fodder?

In general, browse (i.e. fresh tree leaves and small branches) and tree fodder (preserved browse) are good sources of nutrition and compare favourably with grasses grown in the same environment. Trees are also a good source of micronutrients including vitamins and particularly minerals. Where animals have access to trees or hedgerows, they will readily browse indicating its attractiveness as a feed. Browse can range from 12-55 %, 20-76 % and 60-93 % for cattle, sheep and goats respectively. Goats tolerate high levels of browse in the diet due to their saliva that can bind tannins and a large liver that effectively processes tannins. Although the gastrointestinal tract of cattle is well adapted to a grass diet, it does not inhibit efficient digestion of browse. Browse is accessible up to a height of 2 m for cattle and 1.2 m for sheep. Goats are termed vertical browsers, having no meaningful browse height, given their physical agility.

Shade/pasture protection is being born providing shade and shelter for dairy cattle, 2011 in Deer Vale, Denmark L. Whistance

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THE BENEFIT OF ANIMALS

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Farm Woodland Forum

www.agroforestry.ac.uk

- Aim: To facilitate the generation and exchange of information supporting best practice and improving opportunities for farming with trees
- Active JISCmail internet group
- Annual meetings: 5-6 June 2019, Battleby, Perth

